

Charlotte Douglas International Airport

COLLABORATIVE DECISION MAKING WORKGROUP

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August 19, 2009



Federal Aviation
Administration



Charlotte Douglas International Airport Overview



Charlotte Douglas International Airport
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Federal Aviation
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Charlotte Douglas International Airport



- **7th busiest airport in the United States**
- **2nd busiest airport east of the Mississippi**
- **Largest hub operation for USAirways**
- **Approximately 1500 airport operations daily**
- **Approximately 1900 radar operations daily**

Charlotte ATC Tower Staffing:



- 1 Air Traffic Manager
- 1 Staff Manager
- 1 Support Manager
- 3 Operations Managers
- 8 Front Line Managers
- 1 Supervisory TMC
- 4 Traffic Management Coordinators
- 6 Support Specialists
- 92 Air Traffic Controllers
 - 53 CPC's/39 Developmentals / CPCIT's

Charlotte ATC Tower

- CLT is a Combined Tower and Terminal Radar Approach Control (TRACON). The CLT airspace delegated to the TRACON extends up to and includes 14,000 feet.



Tower Cab Positions

- Local Control West
- Local Control East
- Ground Control West
- Ground Control East
- Flight Data/Clearance Delivery
- Cab Coordinator
- Supervisor Cab



Charlotte ATC Tower

14 Operational TRACON Positions

- 2 Arrival Radar
- 2 Final Radar
- 2 Departure Radar
- 3 Satellite Radar
- 2 ILS Monitor Radar
- 2 Radar Coordinator
- 1 Radar Flight Data



Charlotte ATC Tower

- The TRACON expansion project is currently underway to add new radar control positions that will be required for operations when the additional runway opens. There will be an additional Arrival Radar, Final Radar and ILS Monitor Radar position.



Charlotte ATC Tower

**A third tower
Local
Control position
will also be
added when
the new
runway
opens.**



Runway Layout

5 / 23

7,502' x 150'

36R / 18L

8,676' x 150'

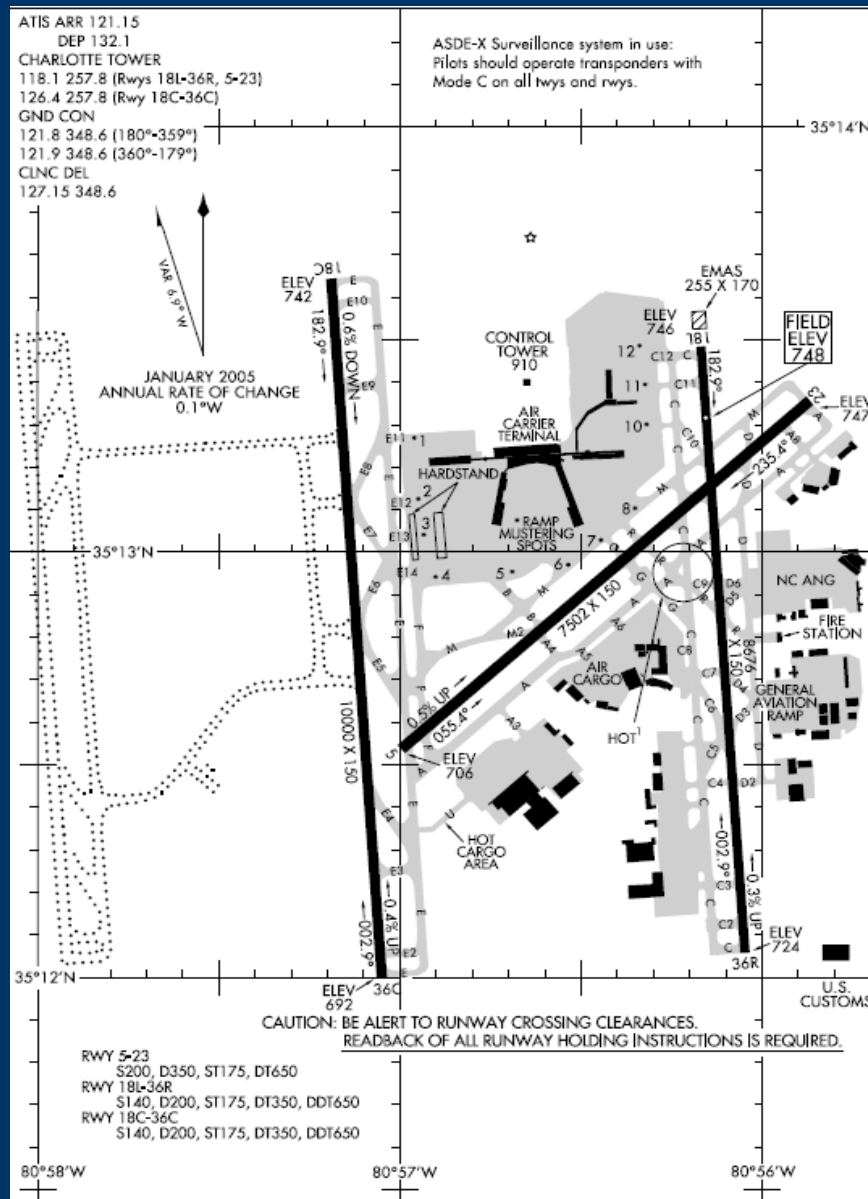
36C / 18C

10,000' x 150'

Future Parallel

36L / 18R

9,000' x 150'



FAA Tower and Ramp Control Operations

The FAA ATC tower and the USAir ramp tower work closely together to ensure smooth movement of aircraft into and out of the ramp areas.



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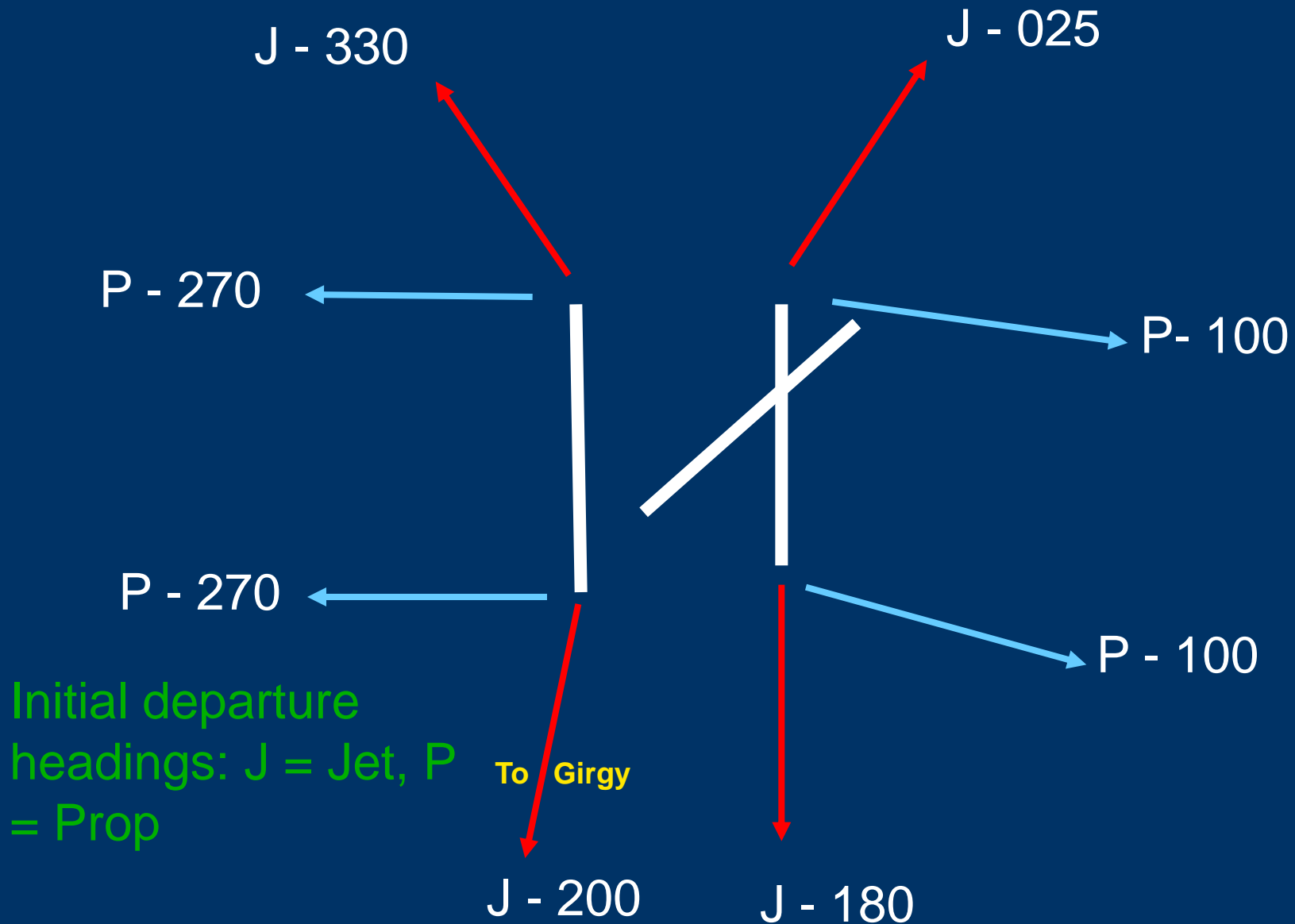
Initial Departure Headings at CLT

For turbojets, these headings are as follows:

Departure runway:	Heading to be assigned:
36R	025°
36C	330°
18L	Runway heading
18C	to Girgy then 200°

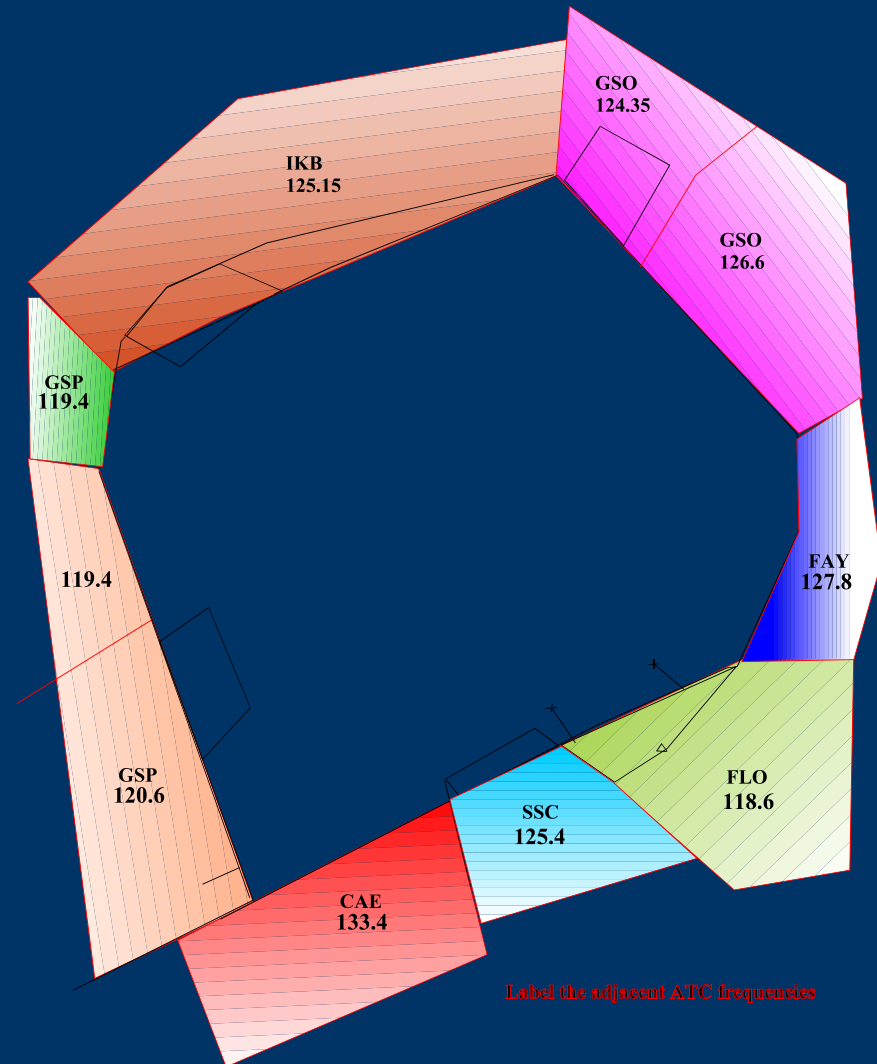
These are required noise abatement headings

These headings are assigned by the local controller in conjunction with the takeoff clearance. *Example phraseology: “AWE1222, runway 18L, fly runway heading, cleared for takeoff”.*



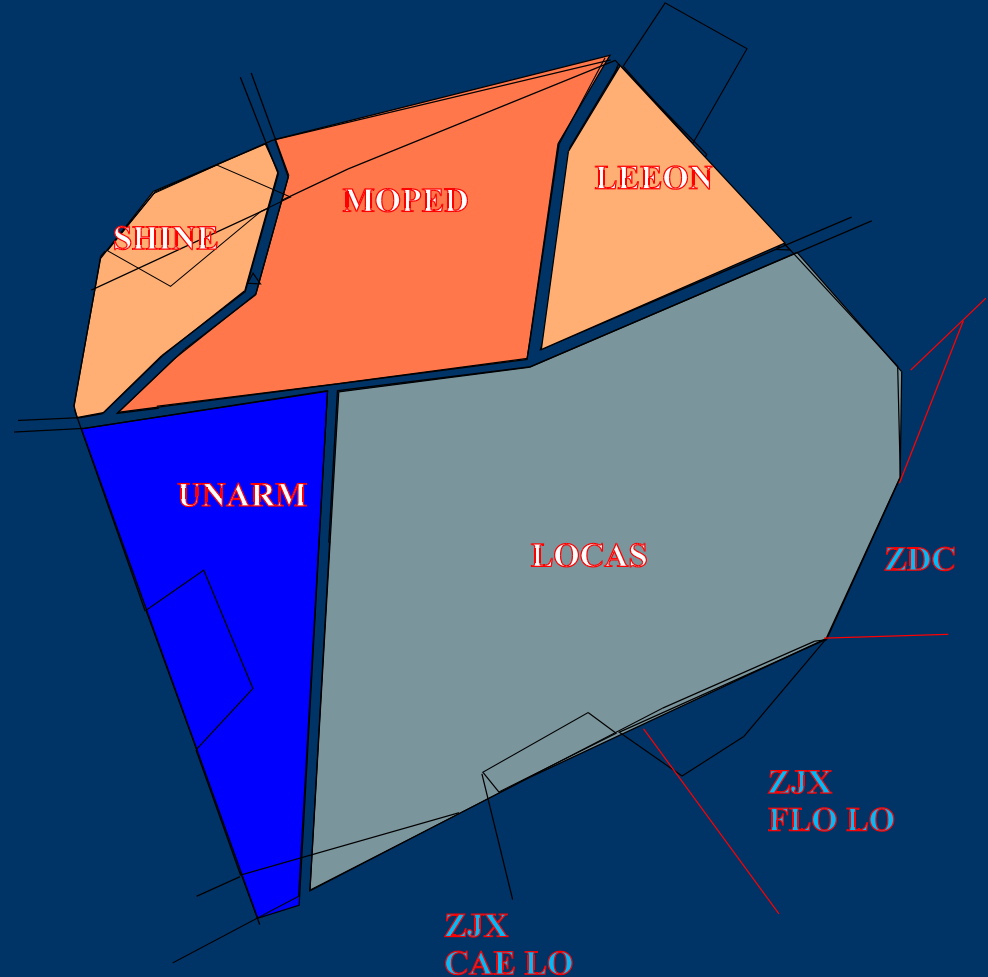
Adjacent Facilities

- GSO ATCT
- FAY ATCT
- FLO ATCT
- SSC ATCT
- CAE ATCT
- GSP ATCT
- IKB Sector of ZTL



Enroute Sectors

- LOCAS (ZTL)
- LEEON (ZTL)
- MOPED (ZTL)
- SHINE (ZTL)
- FLO LO (ZJX)
- CAE LO (ZJX)
- Liberty LO (ZDC)



General Operational Flow

- Long side arrivals remain at or above 9000' until abeam the airport
- Departures remain at or below 8000' until clear of the arrival corridor
- Departures exit via Departure Transition Areas DTA's
- Arrivals enter via Arrival Transition Areas ("Four cornerpost operation")

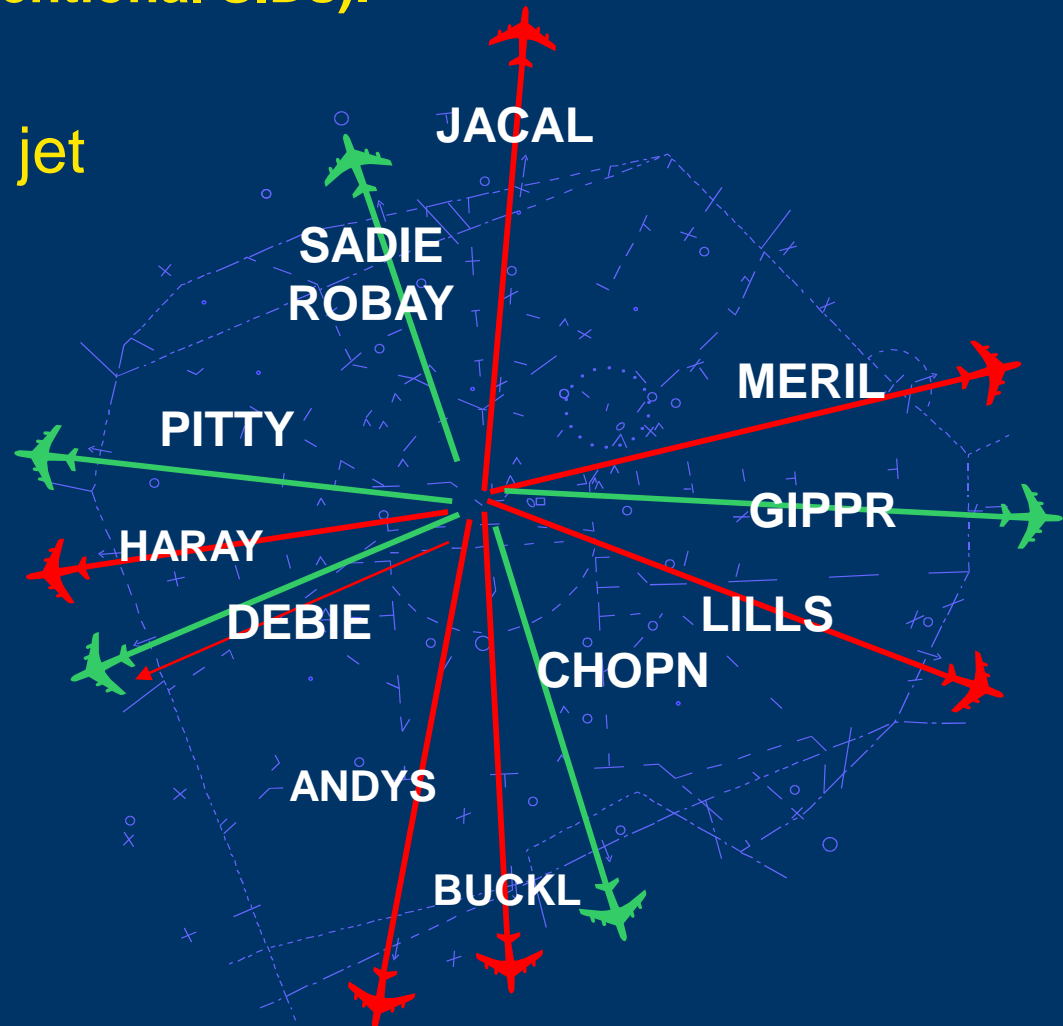


Departure Transition Areas (SIDs) (Most all jet departures use RNAV SIDs, prop departures use conventional SIDs).

→ prop

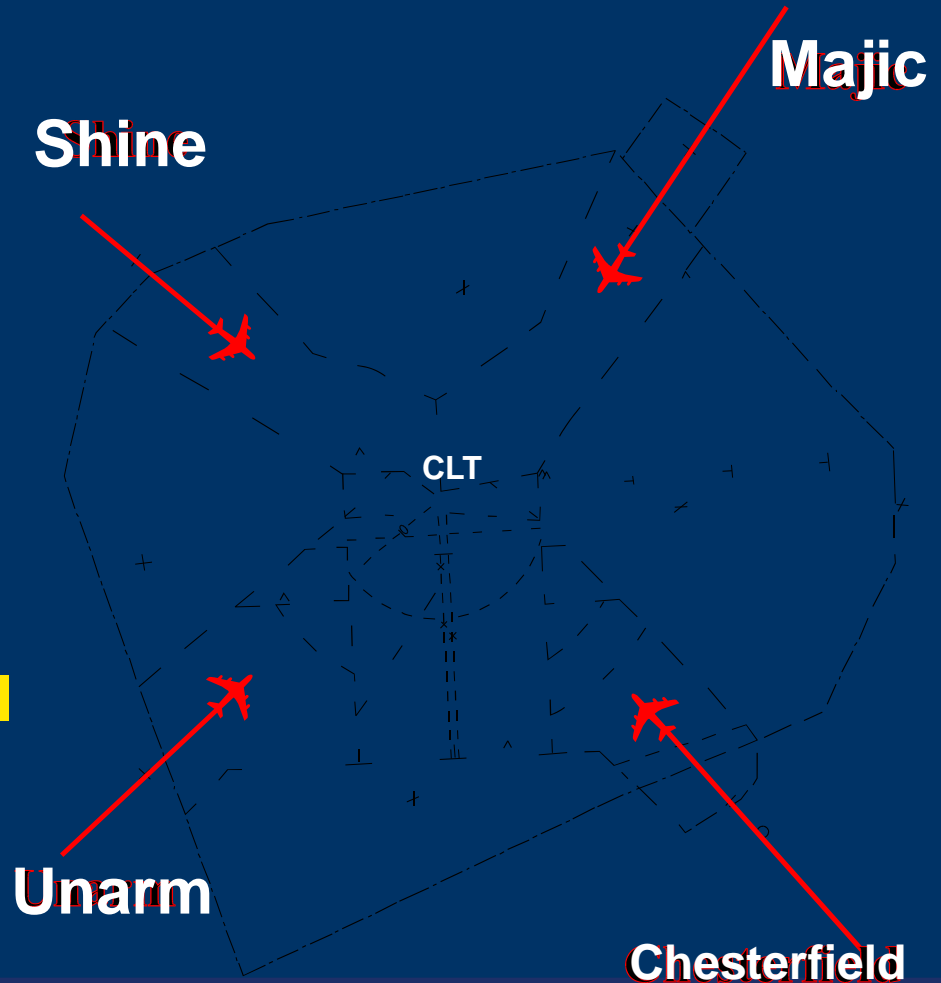
→ jet

- ANDYS (jet)
- BUCKL (jet)
- DEBIE (jet)
- HARAY/OAKUM (jet)
- JACAL (jet)
- LILLS (jet)
- MERIL (jet)
- PITTY (prop)
- SADIE/ROBAY (prop)
- CHOPN (prop)
- DEBIE (prop)
- GIPPR (prop)



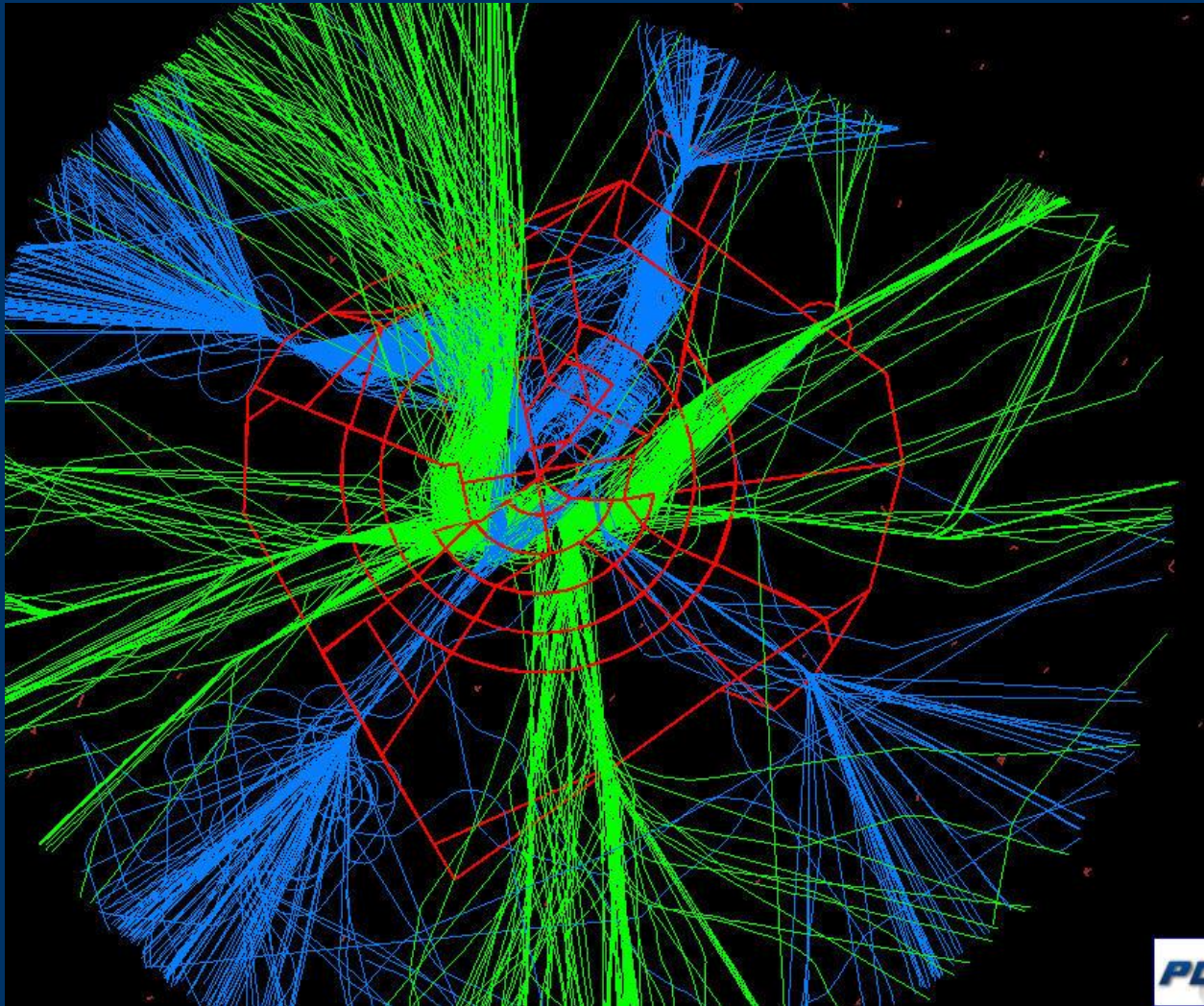
Standard Terminal Arrival Routes

- UNARM / ADENA*
- MAJIC / SUDSY*
- SHINE / JOHNS*
- Chesterfield / HUSTN*
- Asterisk indicates RNAV STARS, used by turbojets only. These overfly the conventional STARS.



Classic Four Post Arrival Operation

- South Op
- Blue = arrivals
- Green = Departure

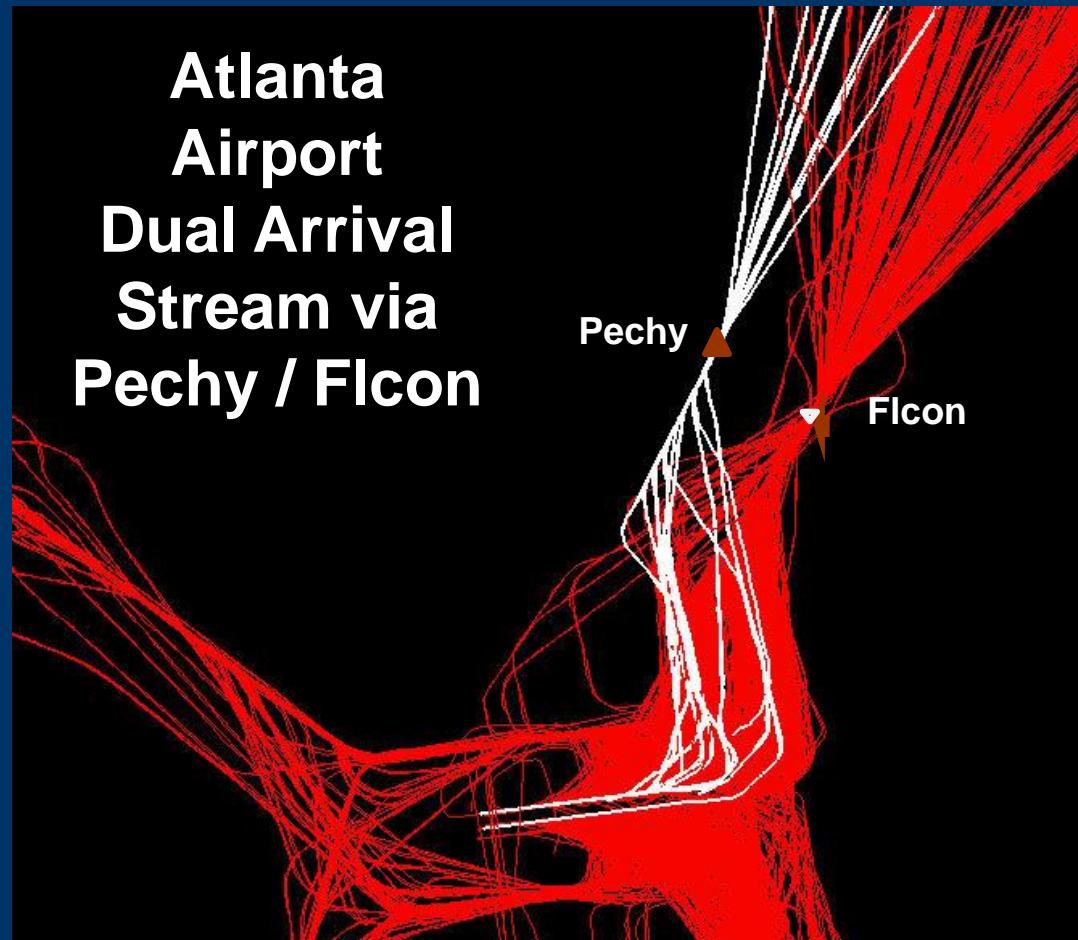


Charlotte Douglas International Airport

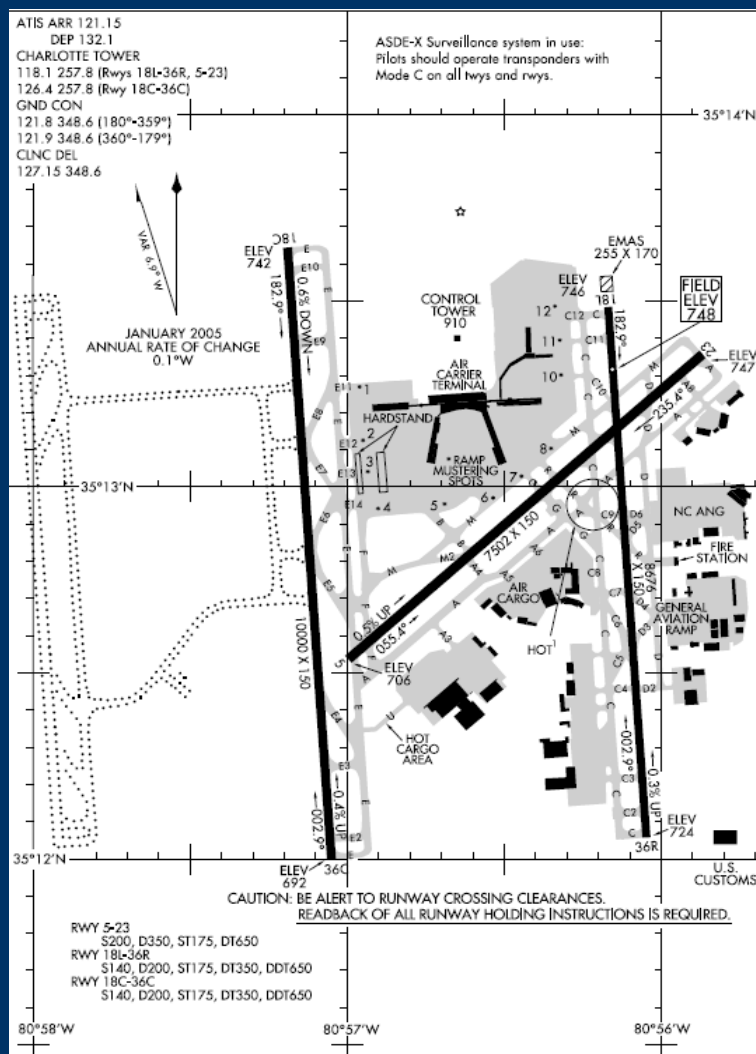
Dual Arrival Streams

CLT airport capacity will increase with the new runway. An opportunity exists for the creation of Dual Arrivals from the same cardinal direction or cornerpost to manage the increased runway capacity. Dual Arrivals are currently used to successfully manage arrival fix volume at other major airports.

Charlotte Douglas International Airport



Three Primary Operating Configurations

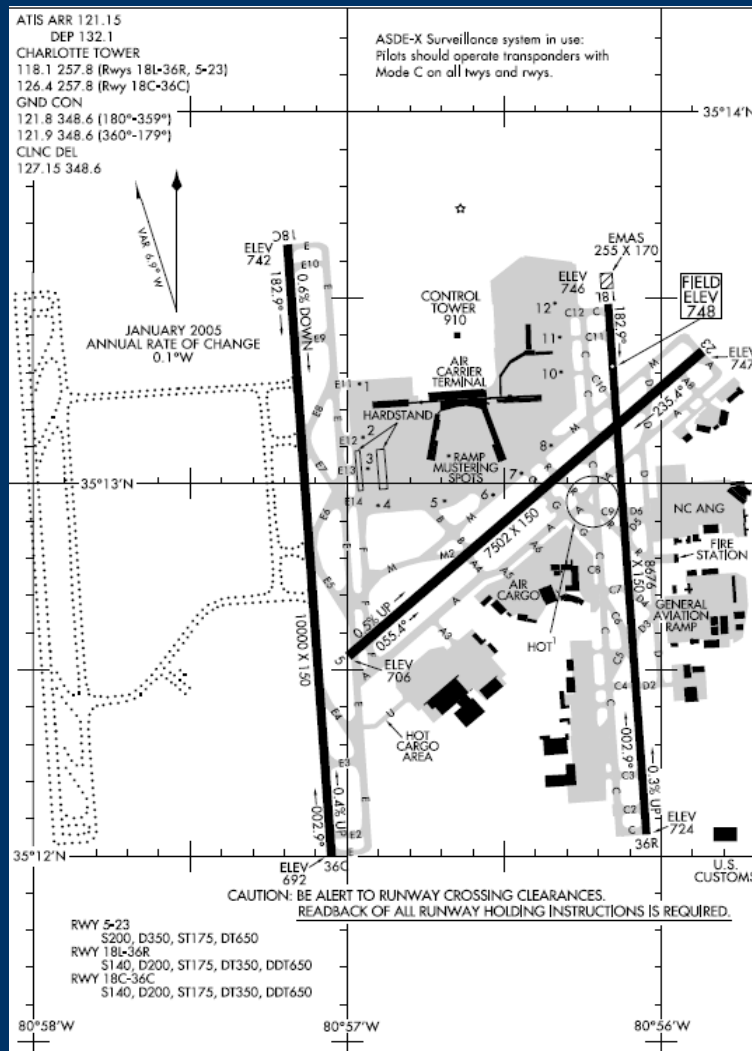


1. *South Converging...*

2. *South Parallel...*

3. *North Parallel...*

South Converging Operation.



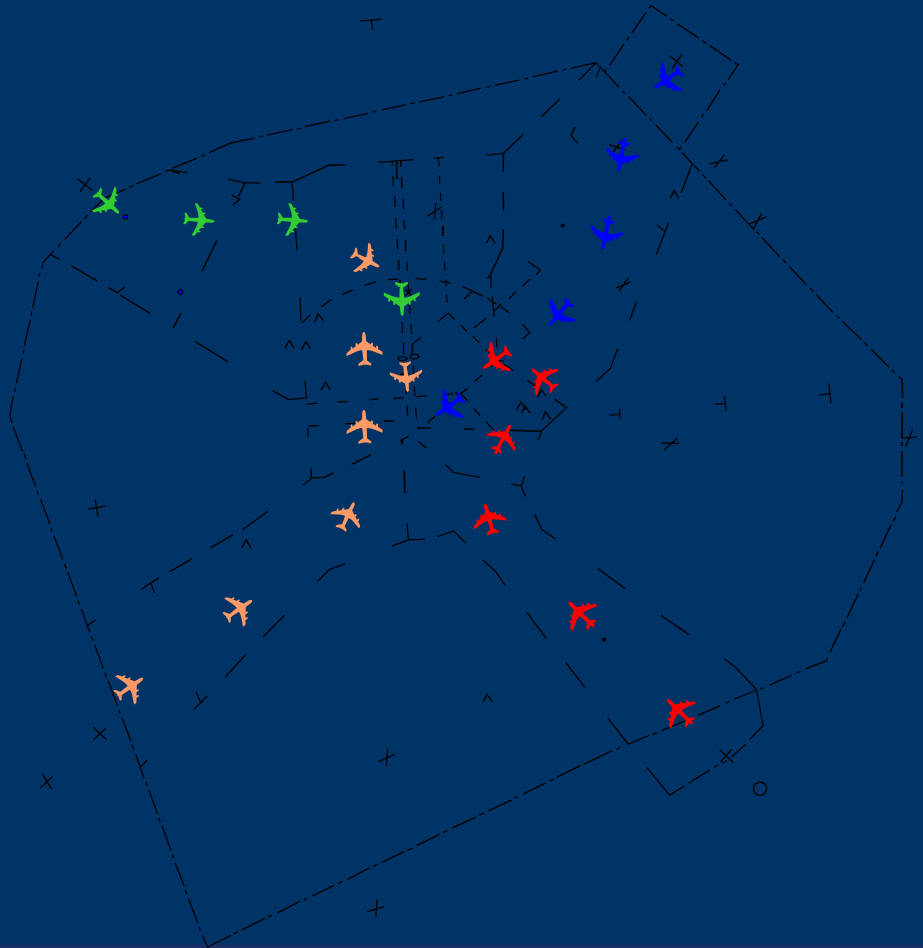
1. Arrive and Depart on Rwy 18C
2. Depart Rwy 18L
3. Arrive Rwy 23

AAR / ADR:

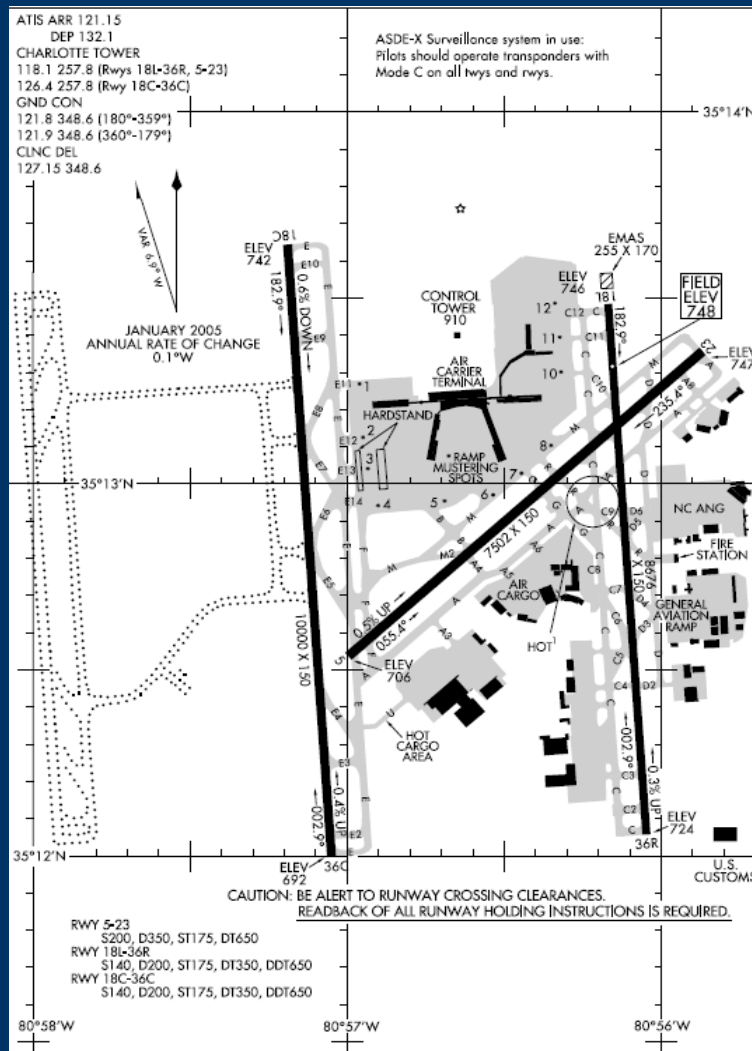
75 / 75

South Operation, RWY 23 Active

- Arrivals from northeast and southeast are flowed to runway 23.
- Arrivals from northwest and southwest are flowed to runway 18C.
- Traffic departs runways 18L and 18C.
- *Most common operation. Used when weather permits converging approaches to runways 23 and 18C.*



South Parallel Operation.



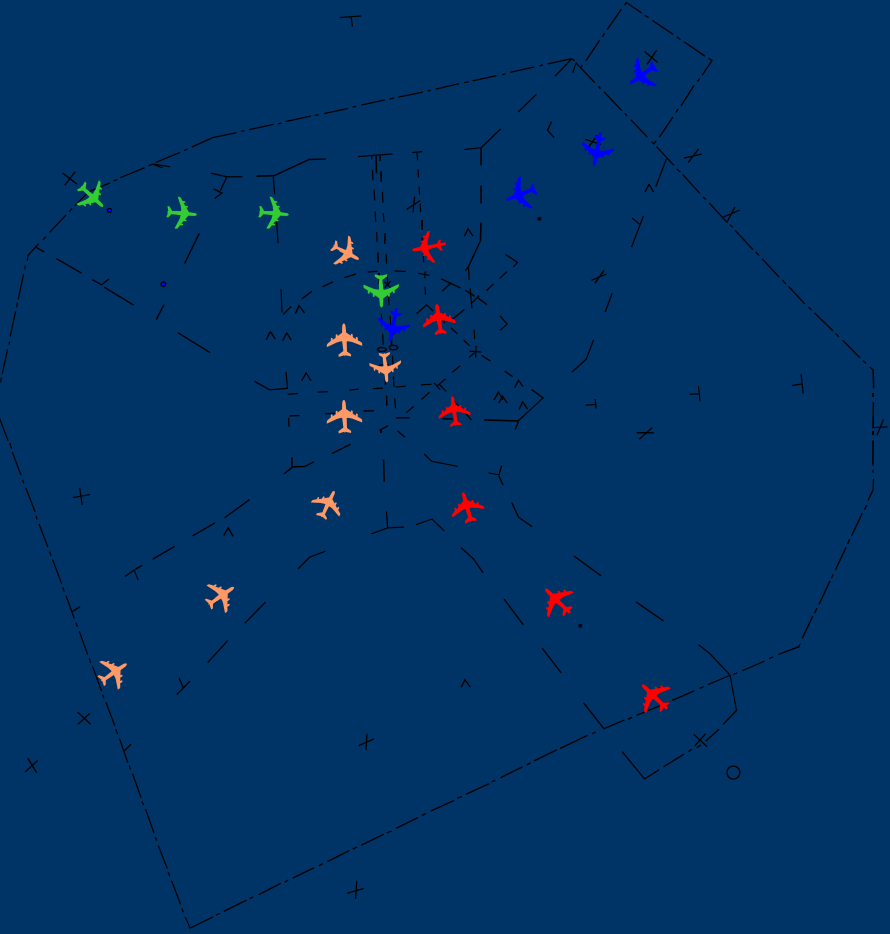
1. Arrive and Depart on
18L and 18C

AAR / ADR:

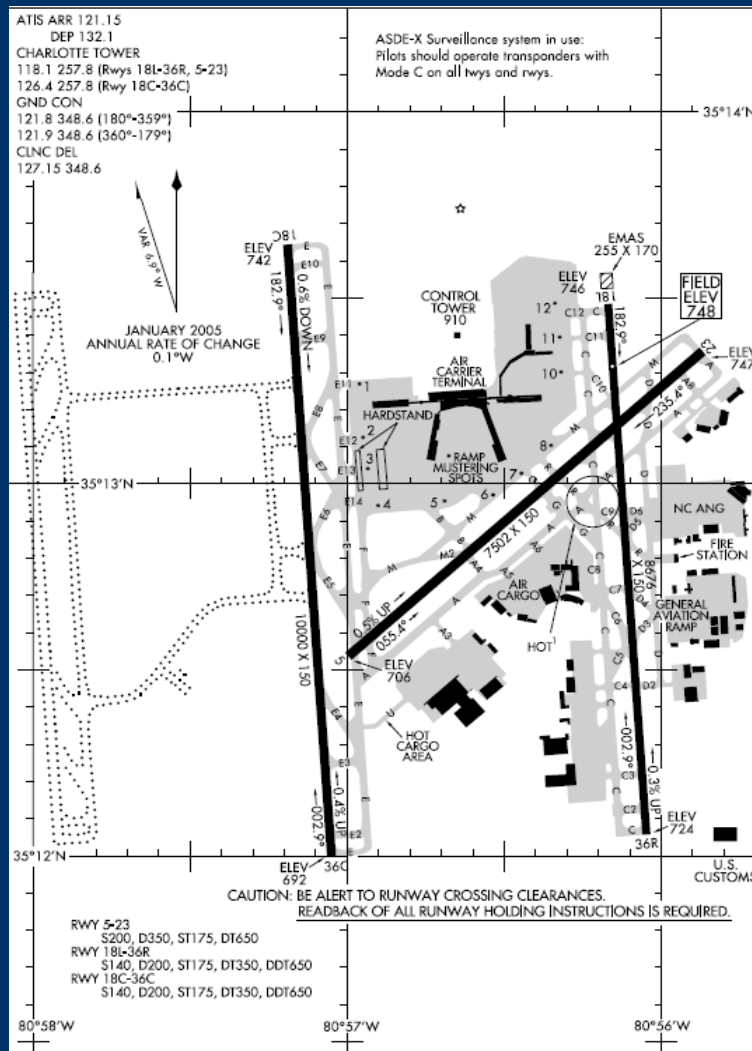
64 / 64

South Operation, Rwy 23 Inactive

- Arrivals from northeast and southeast flowed to runway 18L.
- Arrivals from northwest and southwest flowed to runway 18C.
- Traffic departs runways 18C and 18L.
- *Usually used with Simultaneous Dependent (staggered) or Simultaneous Independent ILS Approaches...with ILS monitors*



North Parallel Operation.



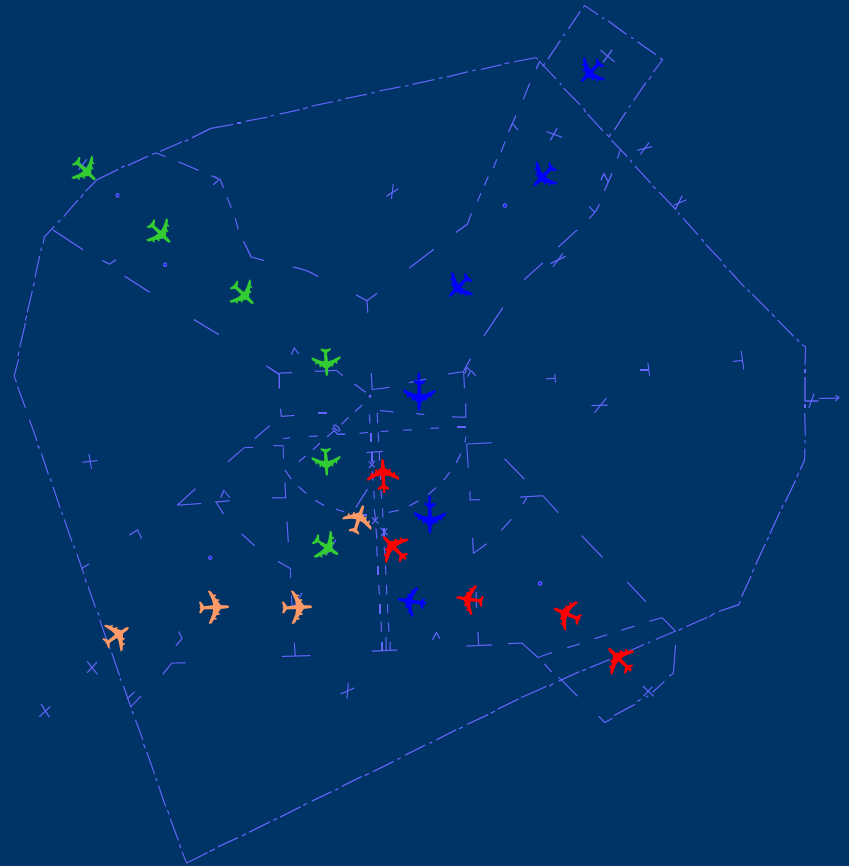
1. Arrive and Depart on
36C and 36R

AAR / ADR:

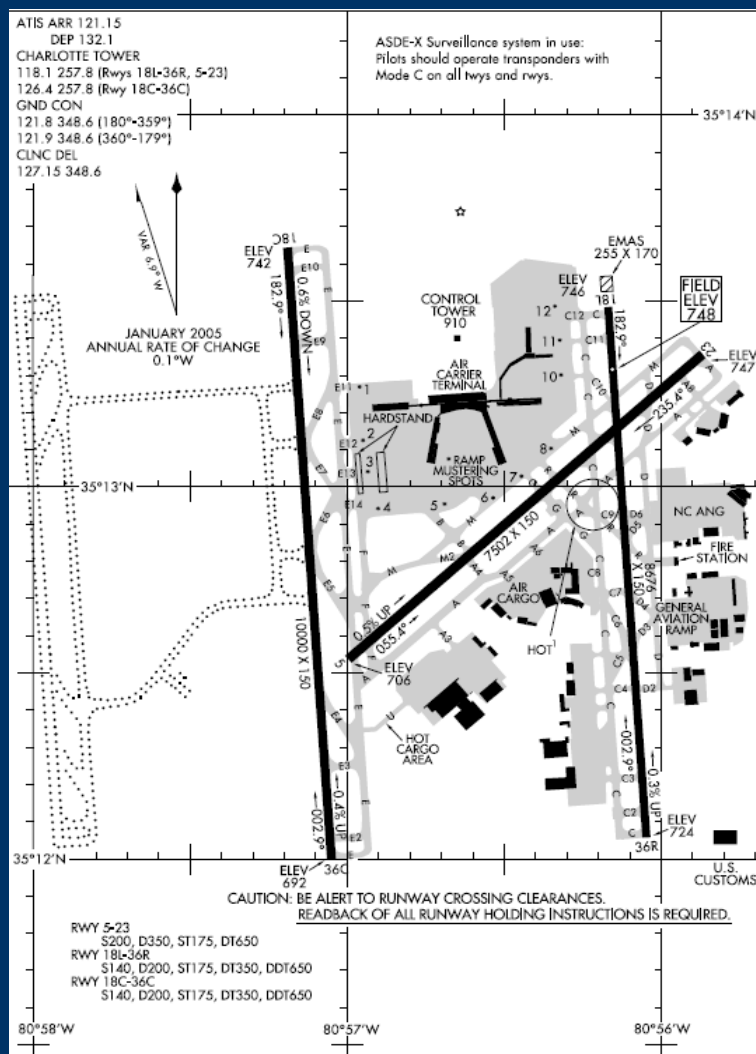
64 / 64

North Operation

- **Parallel North...**
- **Arrivals from northeast and southeast flowed to runway 36R.**
- **Arrivals from northwest and southwest flowed to runway 36C.**
- **Traffic departs runways 36C and 36R.**
- ***Used with Simultaneous Dependent (staggered) or Simultaneous Independent ILS Approaches...with monitors...or Simultaneous Visual Approaches.***



Night Noise Operation



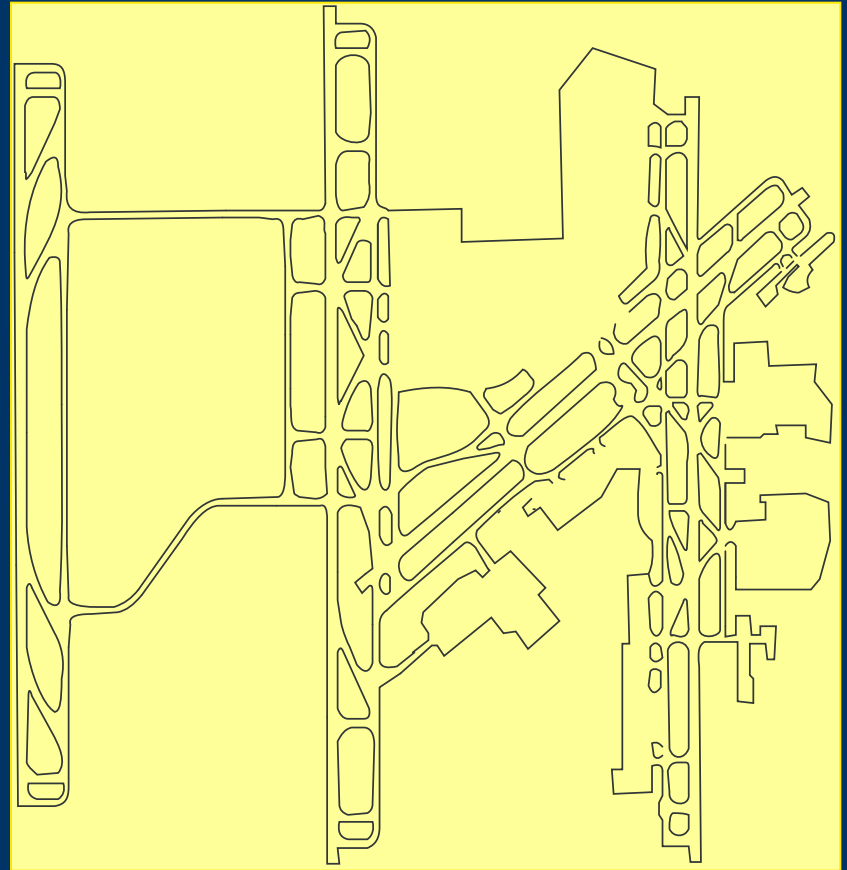
1. Arrive and Depart either Rwy 23 or Rwy 05 for noise abatement.

AAR / ADR: 35 / 35

Typically there are not as many departures during this operation and not as many gaps will be required for departures which allows us to run a 35 AAR.

New Runway 36L/18R

- Runway 36L/18R will be used almost exclusively for arrival traffic.
- 4300' west of 18C/36C which will allow triple ILS approaches.
- Will be CAT III ILS capable on both in North and South operations.



Charlotte/Douglas International Airport Increased Arrival Capacity: SOUTH

Airport Arrival Rates SOUTH Current (VMC)

75 per hour
(arrival operations)

Rwy 18C = 32

Rwy 18L = 0

Rwy 23 = 43

(This rate provides for continuous
departure gaps on Rwy 18C)

Airport Arrival Rates SOUTH New Runway (VMC)

96 per hour
(arrival operations)

Rwy 18R = 43

Rwy 18C = 10

Rwy 18L = 0

Rwy 23 = 43

(This rate provides for departures off
Rwy 18C and Rwy 18L. Rwy 18R
will primarily be for arrivals)

Charlotte/Douglas International Airport Increased Arrival Capacity: NORTH

Airport Arrival Rates NORTH Current (VMC)

**64 per hour
(arrival operations)**

Rwy 36C = 32

Rwy 36R = 32

(This rate provides for departure
gaps on both runways)

Airport Arrival Rates NORTH New Runway (VMC)

**85 per hour
(arrival operations)**

Rwy 36L = 43

Rwy 36C = 10

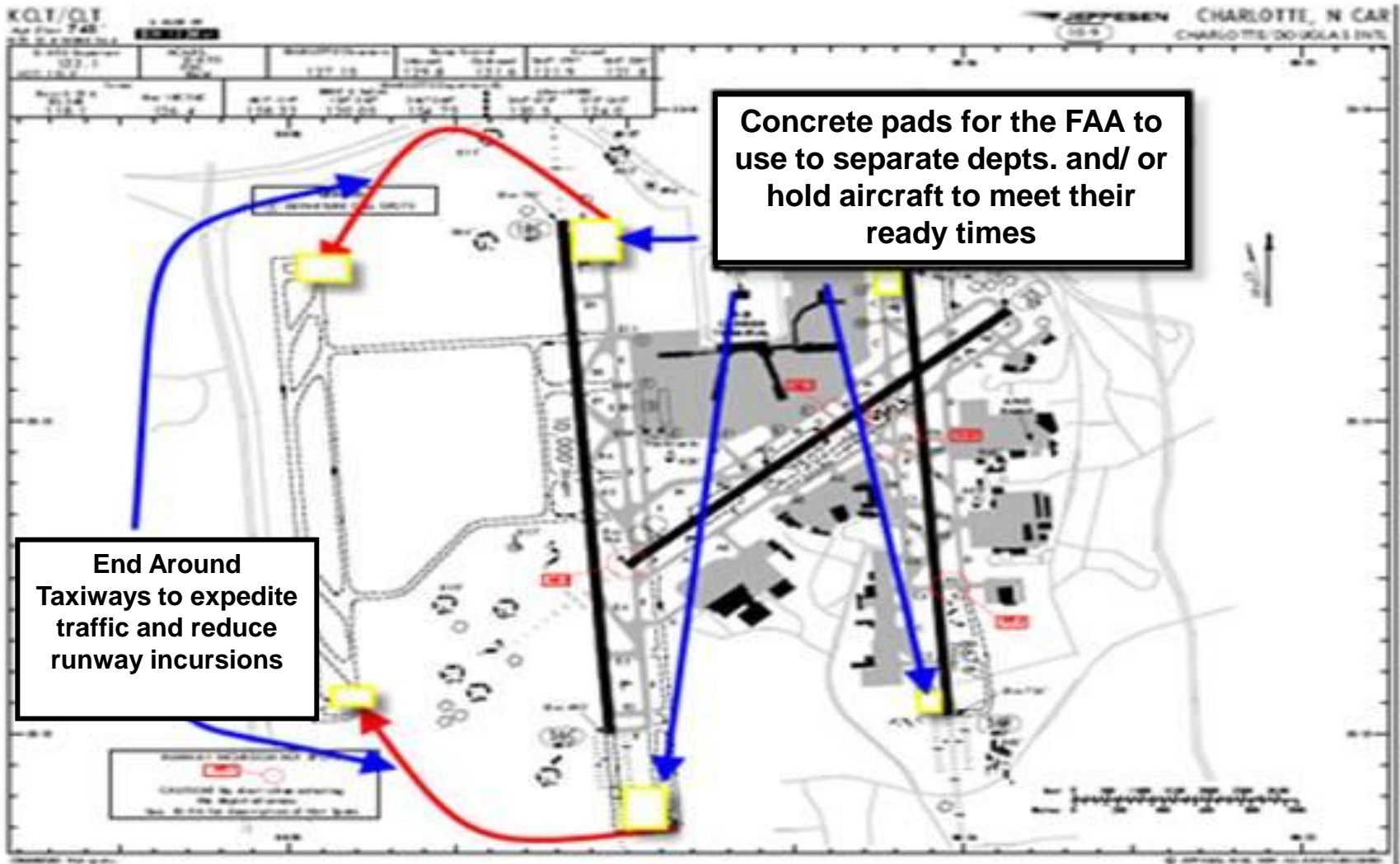
Rwy 36R = 32

(This rate provides for departures off
runways 36C and 36R. Runway
36L will primarily be for arrivals)

Airport Constraints

- There are no run-up blocks to maneuver aircraft or change the sequence. The by-pass taxiway is the only option. Concrete pads at the ends of each runway would aid in segregating departure fixes, allow for re-sequencing when flights are held for mile-in-trail constraints, weather holds or weight and balance problems.
- In the event a flight must exit the runway with traffic on final approach it can not be done quickly with an immediate turn off the runway. It must taxi to a bypass taxiway which may already be blocked. When runway is a shared arrival / departure runway, a go-around is likely.
- The Northeastern area of the airport is congested around spots 10, 11 and 12.





Airport Constraints



**Control Tower
observation of the new
runway.**

**ASDE-X will be used
extensively to observe
runway movements.**

Charlotte/Douglas International Airport

We look forward to the challenges and opportunities that the growth of the Charlotte/Douglas Airport present.

Our continued work together will make Charlotte/Douglas Airport a safe, efficient, model airport for the future.

